CHALLENGE ELECTRONICS

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ISO 9001/14001:2015 Certified

INDICATORS • SPEAKERS • SOUND TRANSDUCERS • ENCLOSURES • MICROPHONES • BATTERY ACCESSORIES

CS16-01P95-03-2X

Rev. 0-2026
RoHS3 & REACH
IPX7 Front Face
Chamber-Free Mobile Speakers

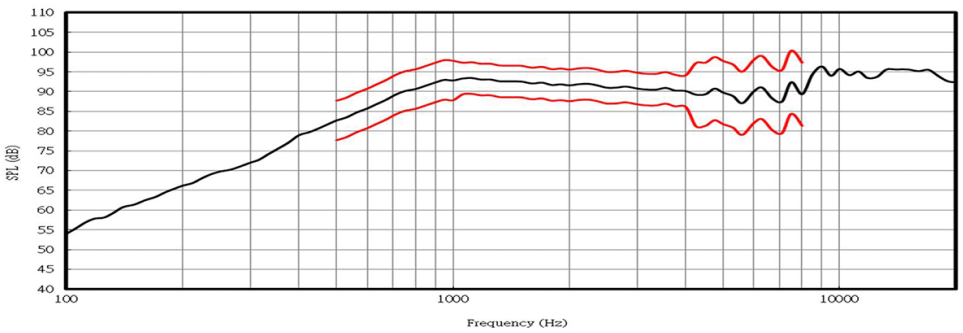
Operating Characteristics:

ELECTRICAL

Rated Power	1 W
Short Term Max Power	1.2 W
Impedance	4 Ω ± 15 % 2,000 Hz; 1 W

ACOUSTIC

f_o	950 Hz ± 20 % 1 W
Freq. Range	760 to 20,000 Hz
Rated SPL	90 ± 3 dB 900 Hz; AVG; 1 W; 10 cm
Distortion	< 10 % 2,000 Hz; 1 W



Hz	500–1000	1060–4000	4250–8000
dB	±5	±4	±8

Physical Characteristics

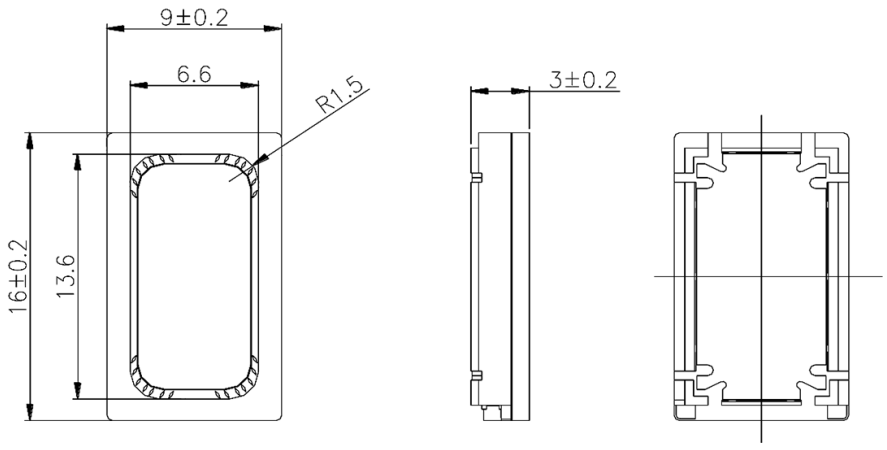
MATERIALS

Housing	PPA
Cone	PEEK
Magnet	NdFeB
Solder Pad	Tin Plated Stainless Steel

TEMPERATURE RANGES

Operating	-20 to +70 °C
Storage	-40 to +85 °C

Weight	1.5 g



General tolerance = ±0.2 mm and all measurements in mm unless otherwise noted.

Revision	Description	By	Date
0-2026	Original Specification	KG	2026-04-02

Warranty: For a period of one (1) year from date of shipping under normal operations conditions. This warranty does not apply to products damaged through misuse, abuse, improper installation, alteration, rework, or attempt to repair.

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Thiele Small Parameters

Electrical Parameters	Values	Unit	Description
Re	3.79	Ohm	electrical voice coil resistance at DC
Le	0.017	mH	frequency independent part of voice coil inductance
L2	0.001	mH	para-inductance of voice coil
R2	0.25	Ohm	electrical resistance due to eddy current losses
Cmes	270.36	µF	electrical capacitance representing moving mass
Lces	0.1	mH	electrical inductance representing driver compliance
Res	1.44	Ohm	resistance due to mechanical losses
fs	953.4	Hz	driver resonance frequency
Mechanical Parameters	**Values**	**Unit**	**Description**
Mms	0.054	g	mechanical mass of driver diaphragm assembly including air load and voice coil
Mmd (Sd)	0.053	g	mechanical mass of voice coil and diaphragm without air load
Rms	0.138	kg/s	mechanical resistance of total-driver losses
Cms	0.518	mm/N	mechanical compliance of driver suspension
Kms	1.93	N/mm	mechanical stiffness of driver suspension
Bl	0.446	N/A	force factor (Bl product)
Lambda s	0.281	N/A	suspension creep factor
Loss Factors	**Values**	**Unit**	**Description**
Qtp	1.687	N/A	total Q-factor considering all losses
Qms	2.325	N/A	mechanical Q-factor of driver in free air considering Rms only
Qes	6.143	N/A	electrical Q-factor of driver in free air considering Re only
Qts	1.687	N/A	total Q-factor considering Re and Rms only
Other Parameters	**Values**	**Unit**	**Description**
Vas	0.0007	l	equivalent air volume of suspension
n0	0.01	%	reference efficiency (2 pi-radiation using Re)
Lm	72.18	dB	characteristic sound pressure level (SPL at 1m for 1W @ Re)
Lnom	72.41	dB	nominal sensitivity (SPL at 1m for 1W @ Zn)
rmse Z	1.17	%	root-mean-square fitting error of driver impedance Z(f)
rmse Hx	4.4	%	root-mean-square fitting error of transfer function Hx (f)
Series resistor	0	Ohm	resistance of series resistor
Sd	1	cm2	diaphragm area

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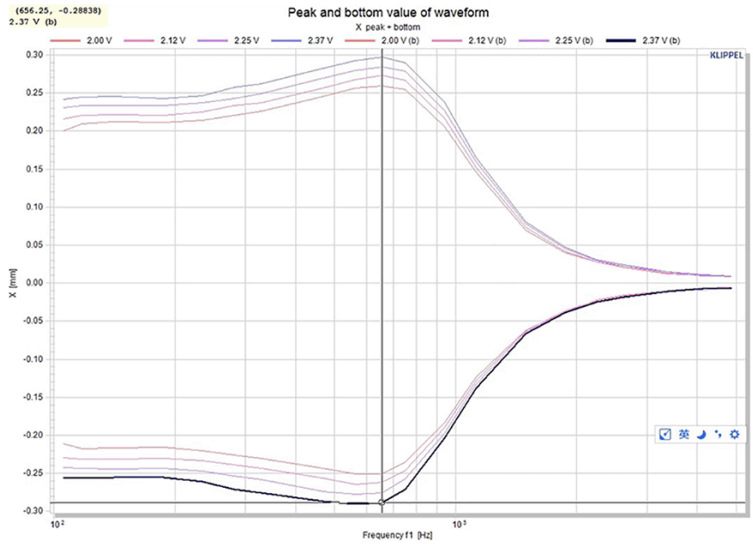
XMAX



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